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OREGON AGRICULTURAL COLLEGE AND EXPERIMENT STATION

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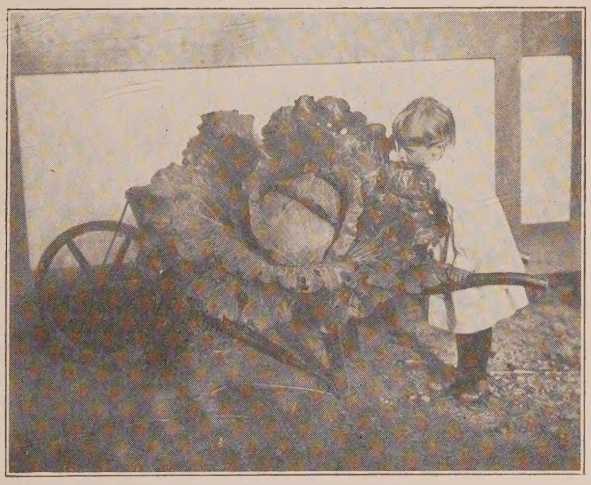
Garden Management. 1.

Circular 1 of this series of reading lessons had for its aim and object the consideration of the value of the home vegetable garden not only to the farmer but also to the business man. There was also included a brief treatise on the principles of hot-bed and cold-frame construction and management together with directions for growing some important vegetable crops under glass during the early spring months.

In the following discussion of other details of vegetable gardening, the first important points of garden management are consider-



ed, written at this particular time to aid those about to make preparations for the year's work. "Garden Management II" will consider the importance of proper cultivation, irrigation, useful tools for this work as well as suggestions for harvesting and marketing vegetable produce and the preparation of the same for exhibition purposes. Each of the various topics under discussion in the following pages is an important one and should be carefully read by every gardener preparatory to beginning work.

Seeds.—The foundation of good crops is to have good seed. The questions very often arise with the amateur gardener, "What do you call good seed"? "Where can I buy it so as to be reasonably sure of its reliability"? Good seed should be not only vital, or having life, but viable, or able to grow. It should be reasonably clean, free from foreign matter, plump, well filled, able to germinate readily under proper conditions and produce strong plants that are true to the type or variety represented. There is such a large number of seedsmen in the country that there must be much hesitancy in deciding to whom to mail the seed order. It will always pay to get the best seed regardless of price. This will be necessary to avoid delay and disappointment in getting results from proper seeding. Vegetable seed, except in a few cases, is inexpensive but there are grades of seed, some of which will not produce the desired end of vigorously growing plants. Most of our large seed firms are as careful and courteous in filling a small seed order as a large one and it is far wiser under most circumstances to be supplied by seedsmen who have a reputation for the reliability of their stock than by purchasing the so-called ready packets offered for sale with attractive colors on the envelope. As a rule experience will go a long way in determining the source of supply. Eastern stock from dependable firms has been usually quite satisfactory under our conditions, while Oregon grown seeds have already proved their worth in many instances.

It is always advisable to mail the seed order early in the new year so as to gain advantage of the good stock while it lasts. If desired some simple test can be made to ascertain the vitality and viability of the seed.

Soil Preparation.—Having purchased reliable stock as per suggestions above, the next important detail is to provide a soil bed that will be conducive to the ready germination of the seed and the vigorous growth of the plants. The working of the soil before seed sowing in the garden represents the highest type of soil tilth. The successful vegetable grower knows that there is no time spent idly in his extra efforts to put the land in the best possible physical condition. Vegetable seeds are small and in order to have them germinate evenly in the seed bed, thereby producing a uuiform stand of plants, the soil must be smooth, fine, loose, free from coarse material such as rocks, sticks, large clods, strawy matter, etc. Such a soil can only be obtained by diligent work in pulverizing thor-

oughly and afterwards raking well. In home gardens in various localities there is bound to be a very wide range in the makeup of soils. Some will be largely composed of clay with but little sand. These are heavy garden soils and it will be necessary to spend considerable time in pulverizing these in order to get them fine. Other soils will be more largely composed of sand and will be much easier to handle in the preparation of a seed bed. The physical makeup of the soil will determine very largely the proper time at which to do the first early stirring in the spring.

If a hand seeder like a Planet Jr. or Iron Age machine be used for seed sowing, it will be especially important to have a smooth seed bed, otherwise these machines will not work to advantage. Likewise, if fine seeds as celery, carrots, parsnips and onions are sown, the soil will have to be finely prepared owing to the difficulty with which these seeds germinate when under very unfavorable conditions. The vigorous germination and after-growth of radish, spinach, peas, beans and the like is a familiar contrast.

Not only will the thorough preparation of the soil be an aid to even germination but it will greatly facilitate the work of cultivating later on. The deeper the soil is worked in the spring the better soil aeration there will be and greater chance for more vigorous plant growth and saving of soil moisture.

Frequent use of the rake should be made in removing coarse matter and in smoothing over in the final preparation of the seed bed.

Arrangement of Crops.—It will be found to be not only economical of space but also labor saving, to say nothing of proper appearance, if some systematic arrangement is made for the location of the crops in the garden. Those vegetables requiring a long growing season should be in a place by themselves; similarly, those maturing quickly by themselves. In this way the former varieties will remain undisturbed until maturity whilst the latter will be quickly harvested and the ground reseeded to another crop. Squash, cucumbers and tomatoes, for example, will occupy space near each other, while lettuce, spinach and radish will be planted so that upon their removal the soil may be quickly put into proper condition and be ready to produce another such short season crop. There should be part of the home garden therefore that will be reserved for the constant production of short succession crops. In this way

there is a tendency toward maximum production and an economical use of the soil.

Seed Sowing.—As some seeds are hardy, some half hardy and others tender to frost it will be impracticable to make sowings of all seeds at one and the same date. Many hardy vegetables as peas, spinach, radish, lettuce, can be seeded in the spring just as soon as the ground has been well prepared. This will usually be from the middle of March to the middle of April. The kind of soil found in the home garden will be the governing factor as regards time of early seeding outside of weather conditions. Tender seeds such as cucumbers, beans, sweet corn, cantaloupes and winter squash should not be dropped until the ground is well warmed, ordinarily about the 1st to the 15th May.

To get an even germination, important factors in seed sowing will be the correct depth of sowing and a careful covering and firming of the seed. Even furrows will have to be made and straight rows will not only add greatly to the appearance of the garden but also will make cultivation easier. Lettuce, spinach and radish may be covered one-half inch deep; such small seeds as carrots, parsnips and celery must be but lightly covered, barely one-fourth inch, while peas, beans, cucumbers and squash may be sown from one to one and a half or two inches.

Firming the soil slightly after seeding will be helpful to rapid germination. This can be done by using a narrow board placed on the row which can be lightly tramped upon. The Planet Jr. or Iron Age machines are very satisfactory seed sowers when handled properly, distributing the seed very evenly and in such a way as to cause the seed to germinate readily. With the added appliances which can be attached to these machines, they will be found most useful and economical not only in seeding but also in cultivation.

It should be the the aim of the gardener to sow approximately the proper amount of seed per row so as to have a good stand of plants, and yet in such a way as to avoid much necessary thinning.

As regards distances between rows and plants in the row, head lettuce cannot be grown very satisfactory unless given a space of 10x10 inches in the field, the rows being 10 inches apart and the plants thinned to stand 10 inches. Leaf lettuce may be grown closer together standing 6 to 7 inches in the row. Spinach rows should be spaced eight inches apart while the radish seed can be sown at the same time as the lettuce seed immediately between the

rows of the latter so that between every lettuce row will be a row of radish which will come out before crowding the lettuce plants. Following the removal of the spinach crops another sowing of radishes can be made on the same piece of ground thereby keeping the soil constantly working. The pea rows should be no closer than 2½ feet and the general arrangement of the garden should be carefully mapped out before planting.

In making sowings of cucumbers and winter squash it would be advisable to enrich the soil at the place where every hill of seed is sown. A hole two feet square and about 8 inches deep should be made into which may be put a mixture of fine well rotted manure and soil thoroughly worked up together. This "compost" in the hill will have the effect of producing a quick, vigorous growth of the vines as well as aiding in holding moisture during the summer.

A liberal amount of seed should be sown per hill, from 5 to 8 seeds being dropped, preferably at an equal distance so as to give chance for even development. Covering of seed should be about 1 inch and the ground should be well warmed before sowing, about the first or second week in May being the best time.

Thinning.—Plenty of room must be given plants to develop properly and therefore as has been already suggested, lettuce should stand approximately 10 inches in and between the rows; radish should have at least 1 inch between the roots; spinach need not be thinned at all; beets and carrots, however, as also onions, should be left standing no less than 3 inches apart. Cucumbers and winter squashes should be thinned so as to leave three of the most vigorous plants evenly spaced in each hill.

Fertilization.—Vegetables must grow steadily to be of the best quality and to this end there must not only be a fine mechanical condition of the soil but it must also be "rich", i. e., contain plenty of available plant food. There is not much danger of having the soil over fertilized for vegetable growing except possibly in one or two cases where there may be trouble experienced in some plants making too much vine growth at the expense of fruit as is sometimes found in tomato growing.

Oregon garden soils are for the most part naturally very productive but some form of fertilization will have to be used to keep up the supply of plant food which is constantly being drained. There is no better general fertilizer than short, well rotted stable manure.

Horse or cow manure mixed with straw as a litter is the best to use but it should be well rotted or composted before being used. Chicken manure is valuable in giving a stimulating effect to vegetable crops but it must be used carefully, otherwise owing to its concentrated form it will cause a burning of the plants. It would be well to dilute with soil or well rotted stable manure in the proportion of 2 parts of the former to one part of the chicken manure and then apply the mixture sparingly. Leaves are valuable for the garden in furnishing humus or organic matter. Wood ashes should also be applied in the spring working, providing potash in the soil. Lime is valuable for its physical assistance to the soil as well as being more or less of a deterrent of some insect pests and also making the soil "sweet."

Just previous to working over the garden in the spring the manure should be evenly spread over the ground and then thoroughly incorporated with the soil by being deeply spaded or plowed in. There is great danger of long, strawy, coarse manure having more of an injurious rather than a beneficial effect especially if it is but poorly incorporated in that it will often act as a barier to proper capillary action and cause rapid moisture evaporation.

If it is desired to give the plants an impetus, chicken manure can be applied as suggested above, or a light application of a commercial fertilizer, as nitrate of soda. may be made. It will be found quite valuable in causing plants to make a quick leaf growth and therefore is useful for lettuce, spinach, celery, young beets, early rhubarb and asparagus. But a small handful is sufficient for each individual plant. The fertilizer is very readily soluble and should be used sparingly and carefully, in such a way as to prevent the salt from coming into direct contact with any part of the plant as burning may follow.

Transplanting.—The time for the transferring of hot-bed and cold-frames grown plants to the field will depend very largely upon the size of the plants, weather and soil conditions. The plants must be well hardened off as explained in Circular 1. They should be stocky and vigorous. Tomato plants should be from 10–12 inches high, strong and self-supporting, having quite a number of vigorous laterals starting. If grown as suggested in Circular 1 they should be ready for field setting about the first or second week in May. Before removing any plants from the cold-frames to the field, care should be taken to see that the transplanting bed is well pre-

Tomato plants that will receive no check on being set in field.
Grown in cardboard and paper pots on the left.
Strawberry box on the right.

Celery plants "hardened off" in cold frames, ready
for transplanting to the garden.

pared, preferably just freshly stirred and made fine and loose. In the frames the plants ought to be well soaked down a few hours before lifting for field setting. It is preferable by far to set plants in the field in the cooler portions of the day, usually about 3:30 or 4 o'clock. It would be better yet to do the transplanting on a cloudy or rainy day. While it will be possible to transplant early cabbage and cauliflower during early April, tomatoes, peppers and egg plants, etc., should not be transferred to the field until the ground is well warmed, usually about May 1–12. Celery should be six to eight inches high in the frames before transplanting, and if the seed is sown about March 1 the plants will be ready for setting about the last of May or the middle of June.

It is most important to compact the soil thoroughly around the roots of each plant that is set in the field. Following this some loose soil should be drawn over to prevent rapid moisture evaporation. Tomatoes should be set iour feet apart each way, or if the plants are to be trained to stakes and pruned, they may stand two feet apart in rows four feet apart. Celery should be transplanted six inches apart in the row, with a distance of thirty inches between the rows. Great care should be taken in transferring the celery plants from the frames to the field to see that they do not dry out or wither. If the soil at time of setting is inclined to be rather dry the plants should be well watered at planting time, a layer of loose dry soil being brought up to the plants soon afterward. Level transplanting should always be applied in growing the early celery to be later bleached with boards. The tomato plants will be very easily handled in transplanting if they have been grown in the paper or cardboard pots or strawberry boxes as discussed in Circular 1 of this series.